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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/791,823 | 03/04/2004 | Rintaro Minamitani | 520.43596X00 | 3645 |

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EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3753

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,823

Applicant(s)

MINAMITANI ET AL.

Examiner

Tho v. Duong

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/18/06 has been entered.

Response to Arguments

Applicant's arguments filed 11/10/2005 have been fully considered but they are not persuasive. Regarding rejection under 35 U.S.C 102, applicant's argument that the cooling system of Saitoh is configured as a large unit that is totally incapable for use of a cooling system for small electronic device, such a, a laptop computer, has been very carefully considered but is not deemed to be persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., small electronic devices, such as, a laptop computer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, in response to applicant's argument that the cooling system is intent to use in a small electronic device, such as laptop computer, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this instant case, the Saitoh's cooling system is capable of cooling any system.

Applicant's argument that it is improper and has no motivation to combine references to Saitoh and Messina since both references appear to be in different fields of endeavor from each other, has been very carefully considered but is not deemed to be persuasive. Messina discloses a liquid cooling system for cooling an electric component, while Saitoh also discloses liquid cooling system for cooling an electric component. Clearly, Saitoh and Messina are both from the same field of endeavor and/or analogous art. It would have been obvious to one of ordinary skill in the art, would seek the teaching of ion heat exchange bag in a water cooling system in another water cooling system. The motivation of employing the use of the ion exchange bag and its arrangement in the Messina's device is well stated in Saitoh (column 3, lines 35-50 and column 7, lines 33-44), which is for improving the efficiency of deionizing and the elimination pipes and joints associated therewith.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter that the ion exchange bag is freely disposed in the cooling liquid accumulated within the tank and freely disposed in the piping are not supported by the

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original disclosure. It appears in the original disclosure that the ion exchange bag is preferably fix at a predetermined position within an inside of the tank to prevent the bag floating up to the surface (page 9, lines 17-20). Furthermore, it does not appear in the original disclosure that the ion exchange bag is disposed in the piping connecting the jackets, instead, the bag is disposed in the tank.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Saitoh et al. (US 5,572,538). Saitoh discloses (figures 1-4 and column 7, lines 33-43) a liquid cooling system comprising a pump (78) for supplying a cooling liquid; a heat receiving jacket (14) being supplied with the cooling liquid for receiving heat from electronic parts; a radiator (76) being supplied with the cooling liquid passing through the heat receiving jacket; flow passages for circulating the cooling liquid in a route passing through the radiator back to the pump, wherein the radiator and piping are parts that capable of generate corrosive ions therefrom; an ion exchange bag (72c) in the form of an exchange holder enclosing an ion exchange resin therein. Since the bag is made of water permeable mesh that contains the ion exchange resin, the bag is capable of ion exchange through diffusion on almost all water-permeable surfaces; the bag (72c) is exchangeable held within a container (72), which is in turn held within a tank (38); the ion exchange bag (72c) is disposed downstream of the radiator (76) and also in part building up the

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liquid cooling system in an upstream of the heat receiving jacket (14). Saitoh further discloses (column 7, lines 55-63) that the meshed bag (72c) is freely disposed within the container, that is why a stop leaf is needed to prevent the bag getting out of the holder (72).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messina (US 5,309,319) in view of Saitoh et al. (US 5,572,538). Messina discloses (figures 1-5 and column 5, lines 1-6) an electronic apparatus comprising a heat generation element (512) mounted on a substrate; a heat receiving jacket (130,510) being thermally connected to the heat generation element (512); a heat radiation jacket (chiller or condenser); a pump (50) for circulating the liquid to those jackets; a piping (30,60) for connecting the pump and the jackets, wherein an ion exchanger and filter is well known to be incorporated into the cooling system. Messina does not disclose an ion exchange bag held within a container located upstream of heat receiving jacket and downstream of the radiator. Saitoh discloses (figures 1-4 and column 7, lines 33-43) a liquid cooling system having an ion exchange bag (72c), wherein an ion exchange bag (72c) in the form of an exchange holder enclosing an ion exchange resin therein. Since the bag is made of water permeable mesh that contains the ion exchange resin, the bag is capable of ion exchange through diffusion on almost all water-permeable surfaces; the bag (72c) is exchangeable held within a container (72), which is in turn held within a tank (38); the ion exchange bag (72c) is

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disposed downstream of the radiator (76) and also in part building up the liquid cooling system in an upstream of the heat receiving jacket (14). Saitoh further discloses (column 7, lines 33-43) that such arrangement of the ion exchange bag in the cooling system is for the purpose of improving the efficiency of deionizing the liquid coolant. Since Messina and Saitoh are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Saitoh's teaching in Messina's cooling system for the purpose of improving the efficiency of deionizing the liquid coolant.

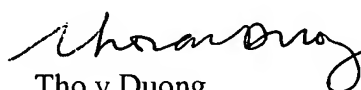
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tho v Duong
Primary Examiner
Art Unit 3753



TD
August 2, 2006